



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

60624-01
Job Sheet 210948



Part No: 60624-01

Job Qty: 4 pcs

Part Name: Barrel Nut



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 6/26/20

Job Tracking No:

Due Date: 7/17/20

Created By: Linda Lacelle

Type: SOLD

Description:

Note: DWG 60624 REV.1 IPP REV:A 2020.03.31 NEW ISSUE DD VERF:RQ

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	SL-154 - 1	4		7/16/20	1.00	0.33	SL-154 - 1		DAS 33 9-89 20/07/19
		pcs							
110	QC 2	4		7/16/20	0.00	0.00	QC 2 - 1		
		pcs					QC 2 - 12		
							QC 2 - 14		
							QC 2 - 17		
							QC 2 - 19		
							QC 2 - 2		
							QC 2 - 20		
							QC 2 - 22		
							QC 2 - 23		
							QC 2 - 25		
							QC 2 - 32		
							QC 2 - 33		DAS 33 9-89 20/07/19
							QC 2 - 35		
							QC 2 - 39		
							QC 2 - 4		
							QC 2 - 40		
							QC 2 - 44		
							QC 2 - 45		
							QC 2 - 48		
							QC 2 - 49		
							QC 2 - 50		
							QC 2 - 51		
							QC 2 - 52		
							QC 2 - 57		
							QC 2 - 62		
							QC 2 - 63		
							QC 2 - 8		
							QC 2 - 66		
							QC 2 - 64		



Container No: S288936



Part: 60624-01

Job No: 210948

Serial No/Batch: S288936

Revision: REV.1

Inspector:

Exp Date:

Instructions:

Date: 07/19/20

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

				QC 2 - 65	
				QC 2 - 5	
				QC 2 - 71	
				QC 2 - 73	
				QC 2 - 69	
				QC 2 - 76	
				QC 2 - 86	
				QC 2 - 83	
120	QC 8	4	7/16/20	0.00 0.00	QC 8 - 12
	pcs				QC 8 - 14
					QC 8 - 17
					QC 8 - 20
					QC 8 - 25
					QC 8 - 3
					QC 8 - 32
					QC 8 - 33
					QC 8 - 35
					QC 8 - 39
					QC 8 - 4
					QC 8 - 44
					QC 8 - 45
					QC 8 - 49
					QC 8 - 58
					QC 8 - 8
					QC 8 - 9
					QC 8 - 68
					QC 8 - 67
					QC 8 - 1 (A)
					QC 8 - 47
					QC 8 - 40
					QC 8 - 52
					QC 8 - 23
					QC 8 - 57
					QC 8 - 76
					QC 8 - 61
					QC 8 - 66
					QC 8 - 73
					QC 8 - 82
130	Small Fab - 2 - B4B	4	7/17/20	0.00 0.13	Small Fab - 1 - B4B
	pcs				Small Fab - 2 - B4B
					Small Fab - 3 - B4B
					Small Fab - 4 - B4B
					Small Fab - 5 - B4B
					Small Fab - 6 - B4B
					Small Fab - 7 - B4B
					Small Fab - 8 - B4B
					Small Fab - 9 - B4B
					Small Fab - Various 1 - B4B
140	QC 5	4	7/17/20	0.00 0.00	QC 5 - 10
	pcs				QC 5 - 12
					QC 5 - 17
					QC 5 - 18
					QC 5 - 19
					QC 5 - 22
					QC 5 - 24
					QC 5 - 3
					QC 5 - 43
					QC 5 - 49

7/20/07/20

DAS
58 JUL 20 2020
9:49

				QC 5 - 51	
				QC 5 - 58	
				QC 5 - 68	
				QC 5 - 9	
				QC 5 - 50	
				QC 5 - 30	
				QC 5 - 40	DAS
				QC 5 - 61	82
				QC 5 - 81	9-89
				QC 5 - 82	JUL 24 2020
150	Packaging 3-1 - Stock - B4B	4 pcs	7/17/20	0.00 0.00	Packaging 3 - 1 - B4B
					Packaging 3 - 2 - B4B
					Packaging 3 - 3 - B4B
					Packaging 3 - 4 - B4B
					Packaging 3 - 5 - B4B
					Packaging 3 - 37 - B4B
160	QC 21 - SA	4 pcs	7/17/20	0.00 0.00	QC 21 - SA - 21
					QC 21 - SA - 70
					QC 21 - SA - 9
					QC 21 - SA - 77

Part Op 100 - 1-Machine as per folio FD182(Ref; D5843) FOLIO REV: N/A DWG REV: 1 2-Deburr
 Descriptions: 110 - QC2- Inspect parts off machine FAI/FAIB
 120 - QC8- Inspect parts - second check
 130 - Install insert as per drawing.
 140 - QC5- Inspect part completeness to step on W/O
 150 - Identify as per dwg & Stock Location: _____
 160 - QC21- Final Inspection - Work Order Release

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M304R0.750	304 SS Roundbar .750	.3600 ft (.09 ea)	100-SL-154 - 1	5257563
3591-6CN562	Self-Locking Thread Insert	4 Ea (1 ea)	130-Small Fab - 2 - B4B	5287864

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-SL-154 - 1	M304R0.750	0	15	0
130-Small Fab - 2 - B4B	3591-6CN562	4	0	0

Part Specifications

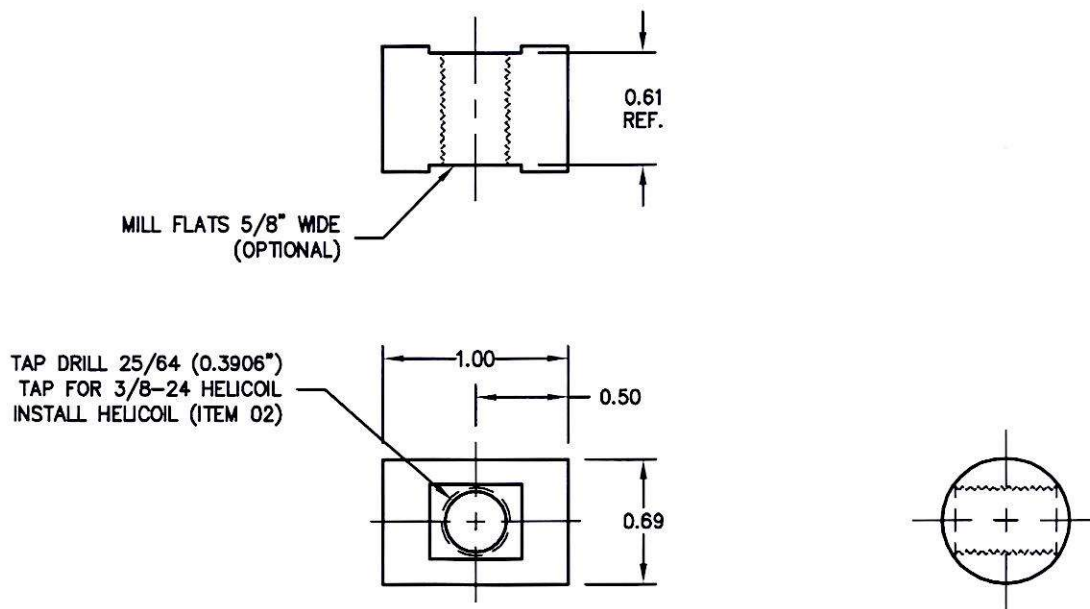
Specifications could not be found.

THIS DRAWING CONTAINS INFORMATION AND DATA WHICH IS PROPRIETARY TO AERO DESIGN LTD. THIS DRAWING, OR ANY PORTION THEREOF, MAY NOT BE REPRODUCED, COPIED, OR DUPLICATED IN ANY MANNER, NOR USED FOR MANUFACTURING WITHOUT THE WRITTEN CONSENT OF AERO DESIGN LTD. BY ACCEPTING THIS DRAWING FOR REFERENCE, THE RECIPIENT AGREES TO HOLD AERO DESIGN LTD. HARMLESS FROM THE USE, OR MISUSE, OF THIS DRAWING OR THE INFORMATION CONTAINED THEREON.

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	CREATED FROM 49320, REV. 1		
1	TITLE BLOCK UPDATED; REFORMATTED TO A4 SIZE	BJC	09/10/2016

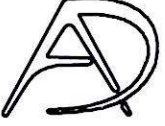
NOTES:

1. REMOVE ALL BURRS AND SHARP EDGES.



01 BARREL NUT

1	3591-6CN562	02	SELF-LOCKING THREAD INSERT	HELICOIL		3/8-24 UNF x 9/16" LONG
	60624-01	01	BARREL NUT	304 STAINLESS STEEL	MIL-S-5059	Ø11/16" BAR
01	PART NO.	ITEM	DESCRIPTION	MATERIAL	MATERIAL SPEC	STOCK SIZE
QTY	LIST OF MATERIALS					

	APPROVALS		DATE	 AERO DESIGN LTD. 9888A MALASPINA ROAD POWELL RIVER, BC, CANADA, V8A 0G3 TEL: 604.483.2376 www.aerodesign.ca
	DRAWN: JEFF CLARKE		29 MAR 2004	
	CHECKED: E. BURGOIN		29 MAR 2004	
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:			
	DECIMALS	ANGLES		
	X.XXX ±0.010	±1/2°		
	X.XX ±0.03			
	X.X ±0.1			
				BELL 407 EXTERNAL ATTACHMENT PROVISIONS BARREL NUT FABRICATION
SCALE 1 : 1		DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 1		A4	60624	1

5257563



CHANDAN STEEL LIMITED
(GOVT. OF INDIA RECOGNISED EXPORT HOUSE)

ISO 9001:2015 CERTIFICATE No. 64220/01022

ADM. OFFICE: 104, SURY SAGAR, N.S. PATIL MARG, KUMBAHARI RD, INDIA

Tel: 91-22-66290600, Fax: 91-22-66290633/34

Website: www.chandansteel.net

Email: csl@chandansteel.net

L/c No.:

L/c Date:

WORKSHEET NO. 31 TO 36, 45, 46, 48, & 49/2, 14

(EXP. AREA) GIDC, UMBERGAON & SURVEY NO. 100/2 & 3, VILLAGE,

DEHARI TALUKA-UMBERGAON, DIST: VALSAD, GUJARAT - 39617.

GSTIN - 24AAAC071812G

F560(824) QC 09A/00/11.01.2018

MILL TEST / INSPECTION CERTIFICATE 3.1
ACCORDING TO EN 10204 - 2005

PRODUCT DESCRIPTION STAINLESS STEEL ROUND BARS					LENGTH Ordered: 12' - 14' Actual: 12' - 14'		Net Wt. 1960 LBS.				
Test Certificate No. : EXP/01011 - 19/2018-2019 Date of Issue : 29.11.2018 P. O. No. : 4500906054 SC No. & Date : 18-19/0303, Dt. 24.09.2018 Invoice No. & Date : EXP/01011/2018-19 Dt. 29.11.2018											
Heat No.	Grade AISI/DIN	Size mm/inches	Tolerance	Process Route							
CH-9215	304/304L 1.4301/L4307 UNS#S30400/S30403	3/4"	h9	Electric Melting, A.O.D. Refining, Continuous Casting							
CHEMICAL COMPOSITION (Weight %)											
	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Co	N
Min.	-	-	1.50	-	0.020	18.00	-	8.00	-	-	-
Max.	0.030	1.00	1.75	0.045	0.030	20.00	0.75	10.50	0.75	0.10	0.008
Results	0.027	0.42	1.75	0.038	0.020	18.18	0.27	8.02	0.54	0.10	0.0800
MECHANICAL PROPERTIES											
Specified Values	Test Method :- EN ISO 6892-1					Hardness EN ISO 6506-1 (BHN)	Test Method :- Charpy "V" Notch Impact Tested (2mm) as per DIN EN ISO 148-1 Sample Size - Test Temp. > 20 °C (Joules)				
	Proof Strength N/mm ² /MPa		Tensile Strength N/mm ² /MPa (Rm)	Elongation after Fracture A %	Reduction of Area %						
	0.2%(Rp0.2)	1%(Rp1.0)					I	II	III	Ave.	
Results	480	519	722	44	67	219-222	N.A.	N.A.	N.A.	N.A.	
Remarks: 1. Cold drawn & Centreless Ground. 2. Solution annealed at 1050°C, soaked for 1-1/2 Hrs. followed by water quenching. 3. PMI test done 100% & found Satisfactory. 4. Material is free from radio-active contamination. 5. Material is free from mercury contamination. 6. Inter-Granular Corrosion Test as per ASTM A262 - 15 (Pr.E) satisfactory. 7. No welding or weld repairs were performed on this material while in our possession. 8. Macro Etch Test & Micro Structure both are satisfactory. 9. Grain size - No. 7-8 of ASTM as per E112-2015. 10. The material Conforms to ASTM A276-17, ASTM A182/A182M-17, ASME SA 182/SA 182M-17, ASTM A479/A479M-17, ASME SA479/SA-479M-17, ASTM A193/A193M-17 B8 - CL1, ASME SA193/SA193M-17 B8 - CL1, ASTM A320/A320M-17 B8 CL1, ASME SA320/SA 320M-17 B8 CL1, AMS-QQ-S-763D COND A, AMS - 5639J, AMS - 5647K, EN 10088-3: 2014 & DIN EN 10272-2016 Specification. 11. Location of sample - Centre, Direction - Longitudinal, Test Temp. - Room Temp., Shape of Test Piece - Round. 12. Marking details - Company Logo, Size, Grade & Heat No. 13. The material is manufactured /melt in Chandan Steel Mill and is of Indian Origin.											
BUNDLE NO.: I3 & 14						COLOUR : GOLD					

It is hereby certified that the above results are true and correct in every details and are meeting the requirements of specification & purchase order.

B. S. RAUTELA
MANAGER - QUALITY ASSURANCE



LINES

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304 R.O. 750

PO / BATCH NO.: POMBCY5835

DATE: FEB 21 2020

5257563

MATERIAL CERT REC'D: YES

THICKNESS ORDERED: 0.750

QUANTITY RECEIVED: 24 FT 26 FT

THICKNESS RECEIVED: 0.750

QUANTITY INSPECTED: 24 FT 26 FT

SHEET SIZE ORDERED: _____

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y ☒ N	
CORRECT FINISH	Y ☒ N	
CORROSION	Y ☒ N	
CORRECT GRAIN DIRECTION	Y ☒ N	
CORRECT MATERIAL PER M-DRAWING	Y ☒ N	ASTM A276
CORRECT THICKNESS	Y ☒ N	
PHOTO REQUIRED	Y ☒ N	
CORRECT REF # TO LINK CERT	Y ☒ N	CH-9215
CORRECT MATERIAL IDENTIFICATION	Y ☒ N	
CORRECT M# ON THE MATERIAL	Y ☒ N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y ☒ N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y ☒ N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: _____ DATE: <u>FEB 21 2020</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

LINE 5

M304R 0.750

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR
(NOTE: AISI 303 NOT ACCEPTABLE)



SPECIFICATION:

ASTM A276

PART NUMBER

M304R D.DDD
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 0.75" ROUND BAR = M304R0.750

DAS
82
9-89

MIL-S-5059?

RELEASED
08/25/15

B	REFORMAT DWG, ADD SPECS (ZN D6-1). REF PAR 08-020A	CP	09.07.15
A	NEW ISSUE	AJS	08.03.03
REV	DESCRIPTION	BY	DATE
DESIGN	ASS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	97	DRAWING NO.	REV. B
CHECKED	97	M304R	SHEET 1 OF 1
MFG. APPR.	MD	TITLE	SCALE
APPROVED	MD	304/316 ROUND BAR	NTS
DE APPR.		COPYRIGHT © 2008 BY DART AEROSPACE LTD	
DATE	09.07.15	THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. NO DISSEMINATION OF THIS DOCUMENT IS PERMITTED WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DART

Page 1/ 1

53400

23586N

12479
RSSD-34

CERTIFICATION DU MATÉRIEL

CLIENT:
SALABERRY-DE-VALLEYFIELD

ACIER OUELLETTE INC DIV.DE
935 BOUL DU HAVRE
SALABERRY-DE-VALLEYFIELD, QUEBEC
QC J6S 5L1

NUMÉRO DE COMMANDE: 15170476 000080
COMMANDE DU CLIENT: ac00023586 80
NUMÉRO DE PIÈCES: 12479
NUMÉRO DE LIVRAISON: 804124526 000010

NUMÉRO D'ARTICLE: 160008467
DESCRIPTION INVENTAIRE: RD CF 304/304L ANN .75 X 144RL

DESCRIPTION ARTICLE FINIS: INOX Barre RD FF(CF) 304/304L
0.75po X 144po LA

NUMÉRO (S) DE COULÉE CH-9215
BRAME / BOBINE / TIN (le cas échéant)
4500906054-14

DAS
82
9-89

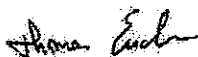
CERTIFICATION

Un sondage de nos sources matérielles a indiqué que ni le mercure ni des substances radioactives ne sont introduits dans leurs produits ni ne sont utilisés dans aucun de leurs procédés. Alors que nous ne faisons aucun test indépendant pour le mercure ou la radiation, il n'y a rien dans le système de qui pourrait entraîner la contamination de l'un ou l'autre type.

Ce document certifie que le matériel décrit ci-dessus a été expédié conformément à votre commande. Le producteur du matériel a certifié à Ryerson qu'il a été produit conformément aux spécifications suivantes:

ASTM A276 A479 UNS S30403 AMS 5638 5647 QQ-S-763 ASME SA479

02/18/2019


Thomas Endres
Vice-président - Approvisionnement

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: 210948 Part No. 60624-01	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☒	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☒ Quality ☒		
Date : JUL 23 2020	Sequence #: QC 6	QTY Affected : 1 unit	MRB (QSI042) 1 NSD 12 9/20/24	
Description Work Order Deviation DURING INSPECTION IT WAS FOUND THAT THE 60624 REV 1 DRAWING CALLS OUT FOR 304 SS PER MIL-S-5059 STANDARDS. THIS SPEC IS NOT ON THE MILL TEST OF THE MATERIAL USED. MATERIAL USED IS 304 SS ROUND ASTM 276.		Disposition Type on dwg, MIL-S-5059 is sheet. Make form M304R round bar per ASTM A276.		Completed By 82 JUL 23 2020 9-89 Lead hand / Supervisor QC / QA Coordinator
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☒ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread Other/Details:		